

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Art Unit	: 1733	Customer No. 035811
Examiner	: Mark L. Shevin	
Serial No.	: 10/587,807	Docket No.: JFE-06-1181
Filed	: July 28, 2006	
Inventors	: Yukio Miyata	Confirmation No.: 5332
	: Mitsuo Kimura	
	: Noritsugu Itakura	
	: Katsumi Masamura	
Title	: MARTENSITIC STAINLESS	
	: STEEL PIPE	

Dated: November 4, 2011

RESPONSE

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

This is submitted in response to the Official Action dated June 9, 2011.

Claims 2-5, 7-10, 12-15 and 17-20 stand rejected under 35 USC §103 over Kimura. Similarly, Claims 2-5, 7-10, 12-15 and 17-20 stand rejected under 35 USC §103 over JP '604. The Applicants respectfully submit that both of Kimura and JP '604 fail to disclose, teach or suggest the subject matter of those claims.

The Applicants' Response dated May 13, 2011 addressed the differences of the claimed subject matter over both of Kimura and JP '604 and provided objective factual evidence that both references specifically do not disclose, teach or suggest the Applicants' claimed  $C_{sol}$ . In response, the rejection suggests that such objective evidence be resubmitted together with a Declaration. The Applicants thus enclose a Declaration of Mr. Yukio Miyata, a co-inventor herein. The Declaration contains the two sheets of the Comparative Table filed with the previous Response dated May 13, 2011 and incorporates the Comparative Table into the

Declaration. Hence, the Declaration establishes that the many Examples of Kimura and JP '604 have  $C_{sol}$  quantities that are in every instance outside of the Applicants' claimed range.

As a consequence, the Applicants respectfully submit that both references are inapplicable to all of the solicited claims because they simply fail to disclose all of the subject matter therein and further fail to provide teachings or suggestions that would or could lead one skilled in the art to the claimed subject matter. The problem with both of Kimura and JP '604 is that they have no appreciation for the importance of the amount of  $C_{sol}$  as it impacts Intergranular Stress Corrosion Cracking (IGSCC). Careful scrutiny of both references reveals that there is no such discussion of the problem, much less teachings or suggestions as to the solution.

In sharp contrast, the Applicants discovered that carbides dispersed in the matrix are dissolved in the matrix during the welding thermal cycle and Cr carbide precipitates at prior-austenite grain boundaries during the following welding thermal cycles. This causes formation of Cr depleted zones around the prior-austenite grain boundaries and this is why IGSCC occurs. The Applicants further discovered that it is important to prevent Cr carbides from being formed at the prior-austenite grain boundaries to prevent IGSCC. Further, they discovered that it is the content of  $C_{sol}$  that effects the formation of Cr carbide and the amount of  $C_{sol}$  needs to be less than or equal to 0.0050% of  $C_{sol}$ .

The Applicants respectfully submit that there simply are no teachings or suggestions in Kimura and JP '604 that reveal their appreciation for controlling the amount of  $C_{sol}$  so that Cr carbide is prevented from being formed at prior-austenite grain boundaries so that IGSCC can be reduced. The Applicants therefore further respectfully submit that the Applicants' multiple discoveries as outlined above are clearly unexpected over the disclosures of Kimura and JP '604 that do not recognize any aspect of the Applicants' solutions to the IGSCC problem. In fact, the

Applicants respectfully submit that both disclosures are nonenabling inasmuch as they provide no recognition of the Cr carbide problem at the prior-austenite grain boundaries for prevention of IGSCC, as well as the fact that  $C_{sol}$  is effective to prevent Cr carbide from forming at those locations, and the fact that the quantity should be less than or equal to 0.0050%. Further, there is not even any appreciation in either reference with respect to the determination of the amount of  $C_{sol}$ . Those teachings have been provided by the Applicants where the amount of  $C_{sol}$  is determined in accordance with the claimed methodology such as in the last paragraphs of Claim 2.

The Applicants therefore respectfully submit that they have provided "objective evidence" establishing the differences of the claimed subject matter over both of Kimura and JP '604 as well as the "unexpected" nature of their discovery based on the Kimura and JP '604 disclosures. Moreover, the Applicants respectfully submit that they have thoroughly explained the basis for the unexpected phenomenon over both of Kimura and JP '604. The Applicants therefore respectfully submit that both references are inapplicable and fail to teach or suggest the subject matter of the solicited claims. Withdrawal of both rejections is respectfully requested.

Claims 2-5, 7-10, 12-15 and 17-20 stand rejected on the grounds of nonstatutory obviousness-type double patenting over Claims 1-3 and 8 of co-pending Application No. 12/665,097. The Applicants respectfully request that the "provisional" nature of this rejection at a minimum be held in abeyance, but further respectfully request that the rejection be withdrawn in this application and that to the extent that nonstatutory obviousness-type double-patenting issues arise in the co-pending '097 application, that such double-patenting issues can be resolved in that application. In the meantime, this application can be passed on to allowance.

Claims 2-5, 7-10, 12-15 and 17-20 also stand rejected on the grounds of nonstatutory obviousness-type double patenting over Claims 1-5 of US Patent No. 7,842,141. The Applicants respectfully submit that this rejection is inapplicable for the same reasons as set forth above with respect to Kimura. In that regard, the Applicants note that this double-patenting rejection claims essentially for the same reasons as set forth above with respect to Kimura. The Applicants therefore respectfully submit that Kimura also does not provide disclosure, teachings or suggestions with respect to  $C_{sol}$  and its impact on Cr carbide formation and its subsequent impact on IGSCC. Thus, US Patent No. 7,842,141 is also inapplicable. Withdrawal of that rejection is also respectfully requested.

In light of the foregoing, the Applicants respectfully submit that the entire application is now in condition for allowance, which is respectfully requested.

Respectfully submitted,



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